

Amir Ghodrati

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Marital Status	Married
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Objectives

Working on new, cutting-edge topics in computer science.
Answering my big question: How does human brain work?
Continuing my graduate studies towards PhD degree (and even more).

Interests

Machine Vision
Machine Learning and Perception/Pattern Recognition
Image and Video Processing
Bio-Inspired Computing

Education

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| 2013-Now | PhD Student, K.U. Leuven, Vision for Industry Communications and Services (VISICS), Department of Electrical Engineering, Leuven, Belgium. Supervisor: Tinne Tuytelaars.
Proposal Title: Human Action Recognition in Realistic Videos. |
| 2011-2013 | Pre-doc Student, K.U. Leuven, Vision for Industry Communications and Services (VISICS), Department of Electrical Engineering, Leuven, Belgium. Supervisor: Tinne Tuytelaars. |
| 2007-2010 | Master of science in Artificial Intelligence, Sharif University Of Technology (SUT), Department of Computer Engineering, Tehran, Iran, GPA: 17.88/20.
Thesis Title: "Human Action Recognition Using Spatio-Temporal Local Features"
Course Works (all with grades A+ or A): Digital Image Processing, Fuzzy Systems, Advanced Image Processing, Artificial Neural Networks, Pattern Recognition, Digital Video Processing, Machine Learning. |
| 2003-2007 | Bachelor of science in Computer Software Engineering, Amirkabir University Of Technology (AUT), Department of Computer Engineering, Tehran, Iran, GPA: 15.22/20.
Thesis Title: "A study on periodic characteristic of TCP flows in frequency domain and simulating it in against of DoS attacks". |
| 1999-2003 | Diploma in Math and Physics, Shahid-Beheshti High-school (NODET), Shahrood, Iran, GPA: 18.89/20.
National Organization for Development of Exceptional Talents. |

Awards and Honors

- 2007** Ranked 10th in nationwide graduate entrance exam in Computer Engineering- Artificial Intelligence of Iranian Universities among 10,000 applicants.
- 2007** Ranked 20th in nationwide graduate entrance exam in Computer Engineering- Computer Architecture of Iranian Universities among 10,000 applicants.
- 2007** Finalist of 12th National Collegiate Scientific Olympiad in Computer Engineering.
- 2007** Honorable mention in local nibble competition, Amirkabir University, AUT Challenge.
- 2003** Ranked 240th in nationwide university entrance exam among 450,000 applicants for Engineering.
- 1996 & 1999** Selected to be taught at National Organization for Development of Exceptional Talents, Shahrood, Iran.

Talking and Teaching

- Spring 2009** Digital Video Processing Course, Teacher Assistant for graduate students, Sharif University Of Technology.
- Spring 2009** Advanced Image Processing Course, Talk on Detecting Irregularities In Images and Videos, Sharif University Of Technology.
- Fall 2008** Technical Presentation Course, Teacher Assistant for undergraduate students, Sharif University Of Technology.
- Fall 2007** Image Processing Course, Talk on Handwritten Segmentation and Recognition Techniques, Sharif University Of Technology
- Spring 2007** Artificial Intelligence Course, Teacher Assistant for undergraduate students, Amirkabir University Of Technology.
- 2006–2009** Instructor, Undergraduate Courses: Theory of Formal Languages And Automata, Computer Architecture, Digital Design, For applicant students as individual education.

Publications

- 2012** A. Ghodrati, S. Kasaei. "Human Action Categorization Using Discriminative Local Spatio-Temporal Feature Weighting", Intelligent Data Analysis, Volume 16(4), 2012.
- 2013** Ghodrati, M.Pedersoli, T.Tuytelaars. "Coupling Video Segmentation and Action Recognition", Winter Application of Computer Vision (WACV) , USA, 2014, oral+poster.
- 2014** Ghodrati, M.Pedersoli, T.Tuytelaars. "Is 2D Information Enough For Viewpoint Estimation?", British Machine Vision Conference (BMVC), 2014, oral (acceptance rate: 7.7%)

Selected Projects

- 2008-2009** M.Sc Thesis: Human Action Recognition Using Spatio-Temporal Local Features.
- 2008** Pattern Recognition: Facial expressions recognition using supervised learning algorithms including Bayes, ML, Parzen window, Multi-layer perceptron, SVM.
- 2008** Face Detection and Recognition: Using Viola and Jones Cascade of Boosted Classifiers and csLDA algorithm, the goal is to detect a face and enroll the face in a smart card and then recognize personnel via their smart cards. The parts of this project are webcam, SQL database, smart cards, card reader and pc.
- 2008** Advanced Image Processing: Implementation of a framework for detecting irregularities in images and video.
- 2008** Image Processing: Implementation of some "image change detection" techniques.
- 2008** Artificial Neural Networks: Image Segmentation and English Character Recognition using Self

	Organization Maps.
2008	Machine Learning: Solving "Traveling Merchant Problem" using reinforcement learning.
2006	Compiler: Design and implement a software which translates high level codes(containing loop and if blocks, function definition and recursive call of functions) to machine level assembly codes
2006	Software Engineering: Design and implement a memo-reminder software.
2005	Data Storage & Information Retrieval: CG125; Modern vector-based search engine in a high volume of documents.

Research Experiences

2007–2010	Image Processing Laboratory, Computer Engineering Department, Sharif University of Technology (IPL) Under supervision of Professor Kasaei, Associate Professor at Department of Computer Engineering, I have worked on one of the most challenging problems in computer vision and pattern recognition. The main purpose of this research was to develop a system which can learn and recognize several human action categories using local (and global) features.
2006	Bachelor thesis, Computer Engineering Department, AmirKabir University of Technology Under supervision of Professor Pedram, Associate Professor at Department of Computer Engineering, I propose a method to identify normal TCP traffic against denial of services attacks using spectral analysis of TCP packets' round trip time.
Summer 2006	Researcher, Dade Pardazi Iran (Ex IBM), The aim of this research was to provide specific distribution details to running DB2 on Linux distribution and how to controls the creation, maintenance, and the use of the database of an organization and its end users through it.

Professional Experiences

2010–2011	Designer and Developer, Developing a License Plate Recognition (LPR) and Speedometer System, Samim Rayaneh Corp, In this project we use image-processing and machine learning techniques to identify vehicles by their license plates and also estimate their velocities in highways. The main parts of this project is to grab frames, detect candidate licenses in frame, segment characters of plate and finally recognize characters and plate numbers. The elements which we used in this projects are 1)A camera with NIR filters 2)Infra-red illuminators 3)our LPR software 4)Database to record/fetch data 5)Web-application program for end user.
2009-2010	Researcher, Embedded Software Designer and Developer, Research center of AmirKabir University, In this project, We embed a Real Time Operating System (RTOS) in an evaluation board and developed an application layer for control, handle and record data flows on the board.
2007	Programmer, Farineh Fanavar Corp, The aim of this project is to develop a Engineering Workstation for a Distributed Control System.
2004-2005	Administrator, Administration of AmirKabir dormitory site, (windows server administration).

Technical Skills

Programming Language	Proficient in C/C++, OpenCV, MATLAB, C#, Pascal. Familiar with JAVA, Python.	Platforms	Linux, Windows (9x/NT/2000/XP/Vista), MS- DOS.
Environment	Microsoft Visual Studio [.net]	Web & Database	MS SQL Server, ASP, MySQL.
Typography	TEX and LTEX, Microsoft Office.		

Languages

Farsi (Native)

English (Fluent)
Arabic (Familiar)

Hobbies

Reading books, Listening to music, Watching documentaries about universe and human evolution, Swimming